Claims

WHAT IS CLAIMED IS:

5   1.   A method of processing an image, comprising:

receiving one or more sub images within an image;

separating each sub image from the image;

associating a template with each sub image;

using one or more feature vectors associated with each template to locate

10   one or more features within the sub images; and

processing one or more rules associated with one or more of the located

features.

2.   The method of claim 1 further comprising calculating an instrument reading

15   from one or more of the located features using one or more of the associated rules.

3.   The method of claim 2 further comprising electronically transmitting the

instrument reading.

20   4.   The method of claim 3 wherein the instrument reading is associated with one

of the sub images, which represents a picture of an instrument panel.

5.   The method of claim 1 further comprising, periodically repeating all the

steps.

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6.   The method of claim 5 wherein a period to repeat the steps is customizable.

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7.   A method of converting an instrument reading to digital information storage on a computer readable medium, comprising:

5   receiving an electronic image of an instrument having one or more image features necessary for resolving an instrument reading;

        isolating each image feature within the image by comparing each isolated image to its own feature vector;

        mapping or calculating each isolated image feature to its own value, the

10   value associated with each isolated image feature's orientation within the image; and

        determining the instrument reading by performing a calculation on the values.

15   8.   The method of claim 7 further comprising calibrating the isolating step one time before capturing the image.

9.   The method of claim 8 further comprising determining an degree of angular orientation associated with calibrating and using the angular orientation in isolating

20   each image feature.

10.   The method of claim 7, wherein the instrument is a control panel.

11.   The method of claim 10 wherein the control panel is associated with at least

25   one of an aircraft, a marine vehicle, and a land vehicle.

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12. A method of processing an image, comprising:

identifying one or more sub images which are associated with an image of one or more instrument panels of one or more devices;

identifying values represented by one or more located features within each

5   sub image by using one or more templates; and

using the values to generate one or more readings for one or more of the instrument panels of one or more of the devices.

13. A computer readable medium having an image template used to process

10   image data, comprising:

a template type uniquely identifying the template and assigned to a defined region of the image;

one or more feature recognition attributes; and

a feature recognition vector associated with detecting a feature image within

15   the defined region by searching the defined region for one or more of the feature recognition attributes.

14. The template of claim 13 further comprising, one or more attribute rules associated with the template type, wherein one or more of the rules and operable to

20   be used by a processing set of executable instructions to extract or associate information from the feature image.

15. The template of claim 14 wherein the information includes associating an instrument reading with the feature image.

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16. The template of claim 15 wherein instrument reading depends on a detected orientation of feature image within the image data.

17. The template of claim 14 wherein the information includes extracted

30   numeric characters, symbol characters, or alpha characters.

18.   The template of claim 17 wherein the information is extracted using an optical character recognition set of executable instructions.

19.   A computer readable medium having functional data stored thereon used to
5   translate image data, the function data comprising:

 image data including one or more instrument images;

 rules data uniquely associated with one or more of the instrument images;

 processing instruction data operable to isolate each instrument image and use the rules data to detect one or more reading indicators within each instrument image
10   and translate one or more of the reading indicators into an instrument reading represented by the image data.

20.   The functional data of claim 19, further comprising transmitting instruction data operable to transmit one or more of the reading indicators and the instrument
15   reading.

21.   The functional data of claim 19, further comprising attribute data used by the rules data, wherein the attribute data include one or more attributes associated with each instrument image.
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22.   A system for capturing and processing images, comprising:

 a camera to capture an image;

 a template uniquely associated with a sub image of the image;

 a feature vector defining a feature within the sub image; and
25   a processing set of executable instructions operable to extract a location of the feature within the sub image by using the template and the feature vector.

23.   The system of claim 22 further comprising, a mapping set of executable instructions operable to map the location to a value.
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24.   The system of claim 23 wherein the value is associated with a reading on an

instrument panel.

25.   The system of claim 23 further comprising, a recording set of executable instructions operable to record the value.

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26.   The system of claim 22 further comprising, a camera controlling set of executable instructions operable to capture one or more additional images at configurable periods.

10   27.   The system of claim 22 further comprising, one or more additional cameras capturing one or more additional images.

28.   The system of claim 22 further comprising, an image enhancing set of executable instructions operable to improve a quality associated with the image
15   before being processed by the processing set of executable instructions.

29.   The system of claim 22 further comprising, a calibration set of executable instructions operable to calibrate the captured image.

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